Claims

SUB A1

[c1] 1.A positive temperature coefficient of resistance resistor/overload assembly comprising:
at least one wire capable of conducting electrical current;
at least one electrically isolated plug comprising at least one female wire receptacle for receiving the wire, and a female conductive element connected to each wire; and
a positive temperature coefficient of resistance resistor/overload device comprising:
at least one male conductive terminal in a socket for receiving the corresponding female conductive element on the electrically isolated plug;
a plate made of a conductive material attached to each male conductive terminal; and
an angle protruding outwardly from the body of the positive temperature coefficient of resistance resistor/overload device in a plane parallel to the top of the device adjacent to the socket.

[c2] 2.The assembly of Claim 1 further comprising a capacitor having at least one male connector and at least one female receptacle on the positive temperature coefficient of resistance resistor/overload device for receiving the at least one male connector of the capacitor.

[c3] 3.The assembly of Claim 1 wherein the electrically isolated plug further comprises a flexible arm with a locking tab of a size and shape such that the upper surface of the locking tab can be retainingly secured against the underside of the angle on the positive temperature coefficient of resistance resistor/overload device.

[c4] 4.The assembly of Claim 3 wherein the flexible arm can be flexed so as to release the locking tab from pressing up against the underside of the angle.

[c5] 5.The assembly of Claim 1 wherein the sockets on the positive temperature coefficient of resistance resistor/overload device are electrically isolated from adjoining conductive parts.

[c6] 6.The assembly of Claim 1 wherein the sockets on the positive temperature coefficient of resistance resistor/overload device are of a different size to facilitate

connection of the isolated plug to the correct male conductive terminal.

[c7] 7.The assembly of Claim 1 wherein the male conductive terminal is secured to at least one plate by means of adhesive bonding.

[c8] 8.The assembly of Claim 1 wherein the male conductive terminal is secured to at least one plate by means of welding.

[c9] 9.The assembly of Claim 1 wherein the male conductive terminal is secured to at least one plate by means of soldering.

[c10] 10.The assembly of Claim 1 wherein at least one male conductive terminal is cuttingly removed from at least one plate.

[c11] 11.A method for connecting a positive temperature coefficient of resistance resistor/overload device to electrically conductive wire, the method comprising:
providing a positive temperature coefficient of resistance resistor/overload device with at least one male conductive terminal connected to a plate protruding from a socket, and an angle protruding outwardly from the body of the positive temperature coefficient of resistance resistor/overload device in a plane parallel to the top of the device adjacent to the at least one socket;
attaching a plug assembly with at least one female conductive element, and at least one electrically isolated female wire receptacle for receiving electrical wire to the electrically conductive wire; and
inserting the plug assembly into the positive temperature coefficient of resistance resistor/overload device such that the at least one female conductive element on the plug assembly is fittingly engaged on the corresponding male conductive terminal in the socket on the positive temperature coefficient of resistance resistor/overload device.

[c12] 12.The method of Claim 11 further comprising connecting a capacitor having at least one male connector into an at least one electrically isolated female receptacle for receiving the capacitor on the positive temperature coefficient of resistance resistor/overload device.

[c13] 13.The method of Claim 11 further comprising lockingly engaging the topmost surface of a locking tab on a flexible arm on the plug assembly under the

A1 Cont

underside of the angle on the positive temperature coefficient of resistance resistor/overload device.

[c14] 14.The method of Claim 13 further comprising flexing the flexible arm so as to release the locking tab from pressing up against the underside of the angle.

[c15] 15.The method of Claim 11 further comprising making each male conductive element socket on the positive temperature coefficient of resistance resistor/overload of a different size from any other male conductive element socket on the positive temperature coefficient of resistance resistor/overload.

[c16] 16.The method of Claim 11 further comprising making the sockets on the positive temperature coefficient of resistance resistor/overload device electrically isolated from adjoining conductive parts.

[c17] 17.The method of Claim 11 further comprising securing the male conductive terminal to at least one plate by means of welding.

[c18] 18.The method of Claim 11 further comprising securing the male conductive terminal to at least one plate by means of soldering.

[c19] 19.The method of Claim 11 further comprising securing the male conductive terminal to at least one plate by means of adhesive bonding.

[c20] 20.The method of Claim 11 further comprising cuttingly removing at least one male conductive terminal from at least one plate.

[c21] 21.A method for disconnecting a positive temperature coefficient of resistance resistor/overload device from electrically conductive wires in a plug assembly, the method comprising:

disengaging a locking tab on a flexible arm on the plug assembly from an angle on the positive temperature coefficient of resistance resistor/overload device by flexing the arm until the locking tab is released from under the angle;

disengaging the plug assembly from at least one socket containing a male conductive element on a positive temperature coefficient of resistance resistor/overload device; and

completely disconnecting the plug assembly from the positive temperature coefficient of resistance resistor/overload device such that no electrical connection

A1 Cont

continues to exist between the plug assembly and the positive temperature coefficient of resistance resistor/overload device.